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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/501,168	02/09/2000	Stephen William Davies	2-6	3484

7590 10/24/2003

Docket Administrator Rm 3C 512  
Lucent Technologies Inc  
600 Mountain Avenue  
P O BOX 636  
Murray Hill, NJ 07974-0636

EXAMINER

CONTEE, JOY KIMBERLY

ART UNIT PAPER NUMBER

2686

DATE MAILED: 10/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

164

## Office Action Summary

**Application No.**

09/501,168

**Applicant(s)**

DAVIES ET AL.

**Examiner**

Joy K Contee

**Art Unit**

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers


- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

	Case Name.	S.W. Davies 2-6
	Serial No.	09/501168
	Applicant:	S.W. Davies, et al.
	Filing Date:	February 9, 2000
	Group:	2749

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**U.S. PATENT DOCUMENTS**

[illegible]

**FOREIGN PATENT DOCUMENTS**

FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation
<i>a</i>	AA	WO 00/41427	7/13/00	PCT Application	H04Q	7/38	YES
<i>a</i>	AB	WO 00/49827	8/24/00	PCT Application	H04Q	7/38	YES
<i>a</i>	AC	EP1124400A 2	1/29/01	European Application	H04Q	7/38	YES

**OTHER (including Author, Title, Date, Pertinent Pages, etc.)**

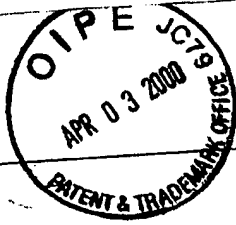
OTHER (including Author, Title, Date, Pertinent Pages, etc.)		
f	AD	Cheng, Y. et al.: "Token Based Authentication for Handover Security" Secure Information Networks. Communications and Multimedia Security, XX, XX, 1999, pages 231-243, XP001000497 paragraph '02.1! - paragraph '03.2!
	...	
	...	...

\*\*\*References listed beyond AZ would list as AA-1, AB-2, AC-3 thru AZ-26.  
with Header/Footer. Subsequent pages must ONLY have

\*\*\*References listed beyond AZ would list as AA-1, AB-2, AC-3 thru AZ-26.  
 \*\*\*Note First Page ONLY Header/Footer. Subsequent pages must ONLY have page # layout as header

EXAMINER	DATE CONSIDERED
<i>A. Carter</i>	<i>10/10</i>

**\*Examiner:** Initial if reference considered, whether or not citation is in conformance with MPEP 609: Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant



INFORMATION DISCLOSURE STATEMENT	Case No.	2-6
	Serial No.	09/501168
	Applicants:	Stephen W. Davies Michaela Vanderveen
	Filing Date:	2/9/00
	Group:	

## U.S. PATENT DOCUMENTS

*Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date
AA						

## FOREIGN PATENT DOCUMENTS

Document Number	Date	Country	Class	Subclass	Translation
AG					

## OTHER (including Author, Title, Date, Pertinent Pages, etc.)

✓ AH	Web Site, <a href="http://www.tik.ee.ethz.ch/~wand">http://www.tik.ee.ethz.ch/~wand</a> "The Magic WAND" 34 pages, 1998.
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EXAMINER <i>g center</i>	DATE CONSIDERED <i>9/29/03</i>
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\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609:  
Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 9 is objected to because of the following informalities: the second limitation does not read clearly, due to lack of punctuation and awkward wording. That is, in lines 7-8, the limitation "indicating that said second base station can engage....with said first base station" appears to be describing "said request" in line 7. Examiner has interpreted the limitation to describe "a response" that is received at said wireless terminal, in line 4. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,3,5,7-12,14,15 and16 are rejected under 35 U.S.C. 102(e) as being anticipated by Ala- Laurila et al. ("Ala-Laurila"), U.S. Patent No. 6,587,680.

Regarding claim 1, Ala-Laurila discloses a method for facilitating secure handoff in a network having at least first and second wireless base stations and at least one wireless mobile terminal, the method comprising the steps of:

receiving a request from said at least one wireless mobile terminal for a handoff from said first base station (i.e., old AP or old access point) to said second base station (i.e., new AP or new access point)(col.8, lines 49-61) ; and

transferring security information (i.e., security association parameters SA) from said first base station to said second base station in response to said request (col. 10, lines 44-49).

Regarding claim 3, Ala-Laurila discloses the invention as defined in claim 1, further wherein at least a portion of said security information is used to validate said at least one mobile wireless terminal to said second base station (col. 8,lines 3-10).

Regarding claim 5, Ala-Laurila discloses the invention as defined in claim 4, wherein all of the security information received by said first base station was received from a wireless mobile terminal validation system (i.e., security association (SA) database) (col. 10, lines 44-57)

Regarding claim 7, Ala-Laurila discloses the invention as defined in claim 1, wherein said transferring security information from said first base station to said second base station in response to said request is performed only when said first base station knows said second base station prior (i.e., availability determiner 36 is included in control elements within base station or AP) to said receiving step (see Fig. 3 and col. 10, lines 44-49).

Regarding claim 8, Ala-Laurila discloses the invention as defined in claim 1, further comprising the step of initiating an encrypted link (i.e., security association or

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authentication key) between said second base station (i.e., new AP) and said wireless terminal when said first base station (old-AP) and said wireless terminal were communicating using an encrypted link, said second base station using said security information transferred from said first base station to said second base station in initiating said encrypted link between said second base station and said wireless terminal (i.e., security association or authentication key is for both ends of communication link) (col. 8, lines 3-41).

Regarding claim 9, Ala-Laurila discloses a method for performing handoffs in a network for providing wireless communication service having at least first and second wireless base stations and at least one wireless mobile terminal, the method comprising the steps of:

transmitting a request, from said wireless terminal for a handoff between said first base station (i.e., old-AP) to said second base station (i.e., new-AP) (col. 8, lines 49-61);

receiving a response, at said wireless terminal, when said second base station (i.e., new AP) knows said first base station (i.e., the APs include a control element such as an availability determiner 36 which indicates to mobile terminal the available Aps to which handover is possible), prior to receiving said request (e.g., available access list can be communicated in periodic intervals or upon initial activation of mobile terminal), indicating that said second base station can engage in facilitated handoffs with said first base station (i.e., is available for the handover of communications) (col. 7, lines 56-67 and col. 8, lines 45-61); and

connecting (i.e., resume payload traffic using new access point) said wireless terminal for user traffic to said second base station (col. 10, lines 27-31).

Regarding claim 10, Ala-Laurila discloses the invention in claim 9, wherein said facilitated handoff employs information about said wireless terminal transferred from said first base station to second base station (col. 10, lines 44-49).

Regarding claim 11, Ala-Laurila discloses the invention as defined in claim 10, wherein said information is security information (col. 10, lines 44-49).

Regarding claim 12, Ala-Laurila discloses the invention in claim 10, wherein said information is security information received from a security center (i.e., accessing SA database). (col. 10, lines 44-49)

Regarding claim 14, Ala-Laurila discloses the invention as defined in claim 10. Ala-Laurila further discloses wherein said information is security information and includes at least one from the set consisting of: (ii) a challenge-response pair (i.e., reads on carrying an authentication challenge from old AP to mobile terminal to trigger backward handover) (col. 8, lines 45-50) and (iii) a challenge-response cipher key tuple (i.e., in order to guarantee security, messages that carry keys are ciphered, e.g., encrypted and authenticated) (col. 8, lines 3-9, 45-50 and col. 9, lines 17-21).

Regarding claim 15, Ala-Laurila discloses the invention as defined in claim 10, wherein said information is security information that is received over a network (i.e., reads on network infrastructure of communication system 10, see Fig. 1) for inter base station communication (col. 6, lines 41-65 and col. 9, lines 17-21).



Regarding claim 16, Ala-Laurila discloses the invention as defined in claim 10, wherein said connecting step further includes the step of:

initiating an encrypted link (i.e., security association or authentication key) between said second base station (i.e., new AP) and said wireless terminal when said first base station (old-AP) and said wireless terminal were communicating using an encrypted link, said second base station using said security information transferred from said first base station to said second base station in initiating said encrypted link between said second base station and said wireless terminal (i.e., security association or authentication key is for both ends of communication link) (col. 8, lines 3-41).

3. Claims 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Cheng et al. ("Cheng"), U.S. Patent No. 6,418,130.

Regarding claim 21, Cheng discloses as method for performing a handoff in a wireless network having at least first and second base stations and a least one wireless terminal, the method comprising the steps of:

receiving a request (i.e., MU initiates handover procedure, see Fig. 5, (1)), by said second base station, from said wireless terminal for a handoff between said first base station to said second base station (col. 7, lines 43-46);

performing an expedited (i.e., MU does not have to renegotiate security attributes (SA), thus less time spent in handover) handoff when second base station knows (i.e., SA are stored in database) are said first base station prior to receiving said request (col. 2, lines 12-17 and col. 7, lines 18-25); and

performing a nonexpedited (i.e., handover that requires renegotiating security information, timely compared to expedited handoff) handoff when said second base station does not know said first base station prior to receiving said request (col. 5, lines 46-55).

Regarding claim 22, Cheng discloses the invention as defined in claim 21, wherein said step of performing an expedited (i.e., MU does not have to renegotiate security attributes (SA), thus less time spent in handover) handoff includes the step of transferring (i.e., via SA request message) security information from said first base station (i.e.,  $Su_{k+1}$ ) to said second base station ( $Su_k$ ) (col. 5, lines 34-42)

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ala-Laurila, in view of Norefors et al. ("Norefors"), U.S. Patent No. 6,370,380.

Regarding claim 2, Ala-Laurila discloses the invention as defined in claim 1, wherein said security information includes a key (col. 8, lines 3-9). Ala-Laurila fails to explicitly disclose wherein said security information includes a set including at least a random number, an authenticator derivable by said wireless mobile terminal but not said first or second base stations.

In a similar field of endeavor, Norefors discloses wherein said security information includes a set including at least a random number, an authenticator (i.e., security token) derivable by said wireless mobile terminal but not said first or second base stations and a key (i.e., encryption key) (col. 2, lines 63-67 and col. 3, lines 46-65 and col. 4, lines 46-50).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Ala-Laurila to include a password security token, such as a random number sequence, for the purpose of providing authenticated and secure communication between a mobile terminal and a first and second base station.

6. Claims 4, 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ala-Laurila, in view of Cheng.

Regarding claim 4, Ala-Laurila discloses the invention as defined in claim 1. Ala-Laurila fails to explicitly disclose wherein said security information transferred from said first base station to said second base station in response to said request is less than all of the security information.

In a similar field of endeavor, Cheng discloses wherein said security information transferred from said first base station to said second base station in response to said request is less than all of the security information (i.e., various SUs or base stations in the same domain do not share the same session keys (e.g., encryption and authentication keys), thus negotiation phase 1 and 2 are required) (col. 4, line 62 to col. 5, line 6).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Ala-Laurila to include partial SA reuse for the purpose of providing an un-compromised secure communication system between mobile units and any of the SUs or base stations (see Cheng, col. 5, lines 1-6).

Regarding claim 6, Ala-Laurila and Cheng disclose the invention as defined in claim 4. Cheng further discloses, wherein all of the security information received by said first base station was received from a third base station (col. 2, lines 53-61).

Regarding claim 13, Ala-Laurila discloses the invention as defined in claim 10.

Ala-Laurila fails to explicitly disclose, wherein said information is security information received from a base station other than said first or second base stations.

In a similar field of endeavor, Cheng discloses wherein said information is security information received from a base station other than said first or second base stations (e.g., a third base station) (col. 2, lines 53-61).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Ala-Laurila to include a third base station in the handover process between a mobile terminal and first and second base station for the purpose of further reusing an existing security association (SA) to support ensured security communication (See Cheng, col. 2, lines 53-61).

7. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng, in view of Raith, U.S. Patent No. 5,241,598.

Regarding claim 17, Cheng discloses a method for performing handoffs in a network having at least first and second wireless base stations and at least one wireless terminal, the method comprising the steps of:

transmitting a request (i.e., MU initiates handover procedure, see Fig. 5, (1)) from said wireless terminal for a handoff between said first base station to said second base station (col. 7, lines 43-46).

Cheng does not explicitly disclose when said second base station does not know said first base station prior to receiving said request, receiving at said wireless terminal an indication that it must connect to said second base station without benefit of information supplied from said first base station.

In a similar field of endeavor, Raith provides evidence carrying on unencrypted communications between the mobile station and the network (including first base station) with an unsynchronized encryption key (i.e., S-key) (col. 30, lines 6-12). Raith also teaches that network (including first base station) may inform the mobile station in a handoff message to disable encryption for a particular call (i.e., thus the mobile terminal is informed that it will handoff without the benefit of information supplied from said first base station)(col. 30, lines 21-24).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Cheng to include unencrypted communications (i.e., when the second (or visited) base station (or network) does not know the first (or home) base station (or network) during a handoff for the purpose of allowing limited or partial authentication until encryption key is restored (see Raith, col. 30, lines 6-24).

Regarding claim 18, Cheng discloses the invention as defined in claim 17, wherein said information is security information (col. 5, lines 34-42).

Regarding claim 19, Cheng discloses the invention as defined in claim 17, wherein said information is security information received from a security center (i.e., DBS 215) (col. 6, lines 7-18).

Regarding claim 20, Cheng discloses the invention as defined in claim 17, wherein said information is security information received from a base station other than the first or second base stations (col. 2, lines 53-61).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lodwig et al., U.S. Patent No. 5,590,172, discloses a method and system for transferring call.

Haartsen, U.S. Patent No. 5,598,459, discloses an authentication and handover method.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy K Contee whose telephone number is 703-308-0149. The examiner can normally be reached on 5:30 a.m. to 2:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 703-305-4379. The fax phone numbers for the organization where this application or proceeding is assigned are 703-


Application/Control Number: 09/501,168

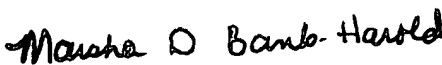
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872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

  
Joy K. Contee  
October 20, 2003

  
MARSHA D. BANKS-HAROLD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600